

REMARKS/ARGUMENTS

Responsive to the Final Office Action of February 17, 2004, independent claim 31 has been amended, and claims 35, 38, 41 and 56 through 105 have been cancelled. Claims 1 through 30 have been previously cancelled. Claims 32, 36, 37, 39, 42, 43, 45, 46, 47, 48, 49, 51 and 53 are also amended in the present response. New dependent claims 106 and 107 have been added.

Pursuant to the present amendments, claim 31 is the only independent claim remaining in the application, with all other claims dependent from claim 31, or claims intermediately depending from claim 31.

Claim 31 has been amended to specifically recite that the surface of the first at least partially light transmissive part inside the pipe section is uneven for reducing deposit build-up on the surface. Claim 31 previously recited, and continues to recite, that the first and second partially light-transmissive parts have a non-stick coating. New claim 106 has been added, which depends from claim 31, and recites that the pipe section is provided with means for flushing away deposits from each of the first and second at least partially transmissive parts inside the pipe section. The flushing means are described at page 6, lines 19-26 of the present specification. New claim 107 also depends from claim 31, and recites that the light responsive detection means comprises a television camera, as described at page 5, lines 29-31 of the specification. For the reasons set forth below, applicant submits that claim 31, as amended, is allowable over the prior art, and that all claims depending from claim 31, directly or indirectly, are also allowable over the prior art.

The apparatus of Santschi is directed only to a gas flow apparatus. There is no suggestion that the apparatus of Santschi can be used for liquids, as specifically recited in Applicant's claim 31. In addition, Santschi does not disclose an uneven surface of the light transmissive parts in

combination with a non-stick surface of the light transmissive parts. The uneven surface of the partially light transmissive part takes advantage of the so-called “Lotus effect,” i.e.: providing less contact area for any particle to attach to the surface, resulting in the attracting forces between the surface and particles to be concentrated in a smaller area and minimizing deposit formation. See specification, page 5, lines 1-7. As stated at page 5, lines 6-8 of the specification, the non-stick coating minimizes the build-up of wax deposits, for example. Therefore, Applicant submits that claim 31, as amended, defines patentable structure over the Santschi reference.

The apparatus shown in the Carr reference is unlike that of the present invention, as the transmission and reception means of the reference device are on the same side of the fluid flow, i.e.: the light that is deflected is reflected light, not transmitted light. Further, Carr does not disclose the use of an uneven surface of the light transmissive parts, and therefore does not teach the combination of an uneven surface with a non-stick surface, as specifically recited in Applicant’s claim 31, as amended.

The Weaver reference applied by the examiner is, again, directed only to a gas flow apparatus, and there is no teaching or suggestion that the apparatus can be used for liquid, as specifically recited in Applicant’s present claims. In addition, the Weaver reference does not disclose the feature of an uneven surface of the light transmissive parts. Additionally, Weaver does not teach the use of an uneven surface of the light transmissive parts in combination with a non-stick surface of the light transmissive parts.

Therefore, Applicant respectfully submits that claim 31, as presently amended, specifically recites, in combination, the surface of the first at least partially light transmitting part inside the pipe section being uneven for reducing deposit build-up upon said surface, and each of

said first and second light transmissive parts having a non-stick coating. Since none of the prior art references, taken individually or combined, teach the combination of these two elements that are recited in Applicant's claim 31, Applicant submits that claim 31 is allowable as amended.

Applicant also submits that new dependant claim 106 is allowable for the above-stated reasons in support of base claim 31. Additionally, none of the prior art references, taken singularly or in combination, teach an uneven light transmissive surface, in combination with a non-stick surface on the light transmissive surface, plus a means for flushing away deposits from each of the first and second light transmissive parts inside the pipe section. Therefore, claim 106 is submitted as allowable, as presently amended.

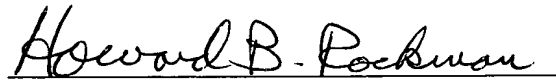
Likewise, claim 107 is submitted as allowable as depending from allowable claim 31. Additionally, none of the references, taken singularly or in combination, teach an uneven surface of the transmissive parts combined with the use of a television camera as a light responsive detection means. The use of a television camera as the detection means is an important inventive feature. The examiner, in the Office Action dated 7/21/2003, stated that the use of a "camera and frame-grabber for testing and storing images of any sample is old and well-known." However, it is telling that none of the applied references disclose or suggest this feature. The use of a camera allows the distinction between solid particles and oil droplets to be determined in the liquid flow, as described at page 5, line 29-31 of the specification. In contrast, the applied prior art references show devices that are only able to detect when an object passes through the detection beam, and are thus unable to distinguish between different objects. Applicant submits that the use of a television camera is therefore a significant and patentable improvement, compared to the prior art systems.

Applicant submits that claims 32 through 34, 36, 37, 39, 40, and 42 through 55 are also allowable, as amended, as depending from allowable claim 31, or from claims intermediately dependent on claim 31.

Pursuant to the above amendments, Applicant submits that all remaining claims in the above-identified application are clearly allowable over the prior art for the reasons cited above. A Notice of Allowance is respectfully solicited.

May 4, 2004

Respectfully submitted,

A handwritten signature in cursive script that reads "Howard B. Rockman". The signature is written in dark ink and is positioned above a horizontal line.

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